

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising at least one replaceable image forming unit and improvement controlling unit that controls to improve image quality of an image to be formed, the image forming apparatus conducting improvement control with the improvement controlling unit and forming an image on a recording medium with the image forming unit,

wherein the image forming apparatus further comprises:

a remaining life detecting unit that detects remaining life left for the image forming unit; and

an improvement prohibiting unit that prohibits improvement control by the improvement controlling unit when a remaining life of the image forming unit decreases to improvement prohibiting level or less.

2. An image forming apparatus according to claim 1 further comprising:

a display section that displays a message for a user; and

a replace-urging-message displaying unit that displays a message that urges a user to replace an image forming unit with a new one in the display section when remaining life of the image forming unit detected by the remaining life detecting unit is predetermined precautionary level or less.

3. An image forming apparatus according to claim 2, wherein precautionary level of the replace-urging-message displaying unit is higher than improvement prohibiting level of the improvement prohibiting unit in terms of length of remaining life.

4. An image forming apparatus according to claim 2 further comprising a replacement-demanding-message displaying unit that makes the display section to indicate a message that urges a user to replace the image forming unit more strongly than the replace-urging-message displaying unit, when remaining life detected by the remaining life detecting unit decreases below alarm level that is lower than precautionary level.

5. An image forming apparatus according to claim 1, wherein:

plural items for improvement control to be done by the improvement controlling unit are provided;

a first improvement prohibiting level that is higher and a second improvement prohibiting level that is lower in terms of remaining life are provided as improvement prohibiting levels for the improvement prohibiting unit;

the improvement prohibiting unit prohibits at least one item for improvement control in case remaining life detected by the remaining life detecting unit decreases to

the first improvement prohibiting level or lower; and
the improvement prohibiting unit prohibits at least
one remaining item for improvement control in case remaining
life detected by the remaining life detecting unit decreases
to the second improvement prohibiting level or lower.

6. An image forming apparatus according to claim 2,
wherein:

plural items for improvement control to be done by
the improvement controlling unit are provided;

a first improvement prohibiting level that is higher
and a second improvement prohibiting level that is lower
in terms of remaining life are provided as improvement
prohibiting levels for the improvement prohibiting unit;

the improvement prohibiting unit prohibits at least
one item for improvement control in case remaining life
detected by the remaining life detecting unit decreases to
the first improvement prohibiting level or lower; and

the improvement prohibiting unit prohibits at least
one remaining item for improvement control in case remaining
life detected by the remaining life detecting unit decreases
to the second improvement prohibiting level or lower.

7. An image forming apparatus according to claim 3,
wherein:

plural items for improvement control to be done by
the improvement controlling unit are provided;

a first improvement prohibiting level that is higher and a second improvement prohibiting level that is lower in terms of remaining life are provided as improvement prohibiting levels for the improvement prohibiting unit;

the improvement prohibiting unit prohibits at least one item for improvement control in case remaining life detected by the remaining life detecting unit decreases to the first improvement prohibiting level or lower; and

the improvement prohibiting unit prohibits at least one remaining item for improvement control in case remaining life detected by the remaining life detecting unit decreases to the second improvement prohibiting level or lower.

8. An image forming apparatus according to claim 5, wherein:

the improvement prohibiting unit prohibits an item for improvement control of which image-quality deterioration speed is slower in case remaining life detected by the remaining life detecting unit decreases to the first improvement prohibiting level or lower; and

the improvement prohibiting unit prohibits an item for improvement control of which image-quality deterioration speed is faster in case remaining life detected by the remaining life detecting unit decreases to the second improvement prohibiting level or lower.

9. An image forming apparatus according to claim 5

further comprising a forcedly-stop unit that forcedly stops image formation in case remaining life detected by the remaining life detecting unit decreases to predetermined forcedly-stop level or lower,

wherein the second improvement level of the improvement prohibiting unit is higher than the forcedly-stop level of the forcedly-stop unit in terms of length of remaining life.

10. An image forming apparatus according to claim 8 further comprising a forcedly-stop unit that forcedly stops image formation in case remaining life detected by the remaining life detecting unit decreases to predetermined forcedly-stop level or lower,

wherein the second improvement level of the improvement prohibiting unit is higher than the forcedly-stop level of the forcedly-stop unit in terms of length of remaining life.

11. An image forming apparatus comprising at least one replaceable image forming unit and improvement controlling unit that controls to improve image quality of an image to be formed, the image forming apparatus conducting improvement control with the improvement controlling unit and forming an image on a recording medium with the image forming unit,

wherein the image forming apparatus further

comprises:

an improvement prohibiting unit that prohibits improvement control by the improvement controlling unit after predetermined timing;

a display section that displays a message for a user; and

a replace-urging-message displaying unit that displays a message that urges a user to replace an image forming unit with a new one in the display section before the improvement prohibiting unit prohibits improvement control.

12. An image forming apparatus according to claim 11 further comprising a replacement-demanding-message displaying unit that makes the display section to indicate a message that urges a user to replace the image forming unit more strongly than the replace-urging-message displaying unit after the replacement-urging-message displaying unit displays a message to replace.

13. An image forming apparatus comprising at least one replaceable image forming unit and improvement controlling unit that controls to improve image quality of an image to be formed, the image forming apparatus conducting improvement control with the improvement controlling unit and forming an image on a recording medium with the image forming unit,

wherein,

plural items for improvement control to be done by the improvement controlling unit are provided; and

the image forming apparatus further comprises an improvement prohibiting unit that prohibits the improvement controlling unit from improvement control by different timing depending on items.

14. An image forming apparatus according to claim 13, wherein:

the improvement prohibiting unit prohibits an item of improvement control image-quality of which deterioration speed is slower at earlier timing;

the improvement prohibiting unit prohibits an item of improvement control image-quality of which deterioration speed is higher at later timing.

15. An image forming apparatus according to claim 14 further comprising a forcedly-stop unit that forcedly stops image formation by predetermined timing,

wherein the timing that the improvement prohibiting unit prohibits an item for improvement control image-quality of which deterioration speed is higher is earlier than the timing that the forcedly-stop unit forcedly stops image formation.